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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,242	01/23/2004	Lee Chow	UCF-293DIV	8035

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EXAMINER

EASTHOM, KARL D

ART UNIT PAPER NUMBER

2832

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/764,242

Applicant(s)

CHOW ET AL.

Examiner

Karl D. Easthom

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 7-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>3/2/5</u> . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 2832

1. Applicant's election without traverse of claims 7-14 in the interview of 3/2/5 is acknowledged.
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-13 are rejected under 35 U.S.C. 102(a) as anticipated by Kobayashi (JP 2000205969) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kobayashi (JP 2000205969) in view of Wickramasinghe et al. '235. Kobayashi discloses the claimed invention at Drawing 6 (machine language translation) with FIB strips of

Art Unit: 2832

different material on an insulator substrate, where the nano-strips of conductors of Pt and Rh are connected to leads (electrical conductor) via golden bonding or paste (output electrodes), see par. 22 under Detailed Desc., and pars. 31-32 under Means. The device is a heater by applying voltage. Where the device has a thickness of 1um see Means, par. 25, the device is a nano-strip since nano does not imply any size limitation in the claim, or as defined in the specification, and the FIB process is used, implying a small device. Or as a 103 alternative, Wickramasinghe '235 et al. discloses at col. 3, lines 40-60, employing small nanoscale heaters and thermocouples, see also cols. 1-2, col. 5, lines 35-65, in order to detect temperatures of small regions, similar to the motivation employed by Kobayashi as noted at the abstract, to measure temperatures in small regions, so that such a combination would have been obvious.

5. Claims 7-11 are rejected under 35 U.S.C. 102(e) as anticipated by Suzuki et al. or, in the alternative, under 35 U.S.C. 103(a) as obvious over Suzuki et al. in view of Wickramasinghe et al. '235 and Carter. Suzuki discloses the claimed invention at Fig. 11E, with strips of different material 53,58 on an insulator substrate 55, where the nano-strips of conductors that include the claimed metals Pt, W and Ga (for claim 10) are disclosed at col. 5, lines 30-40, output electrodes 54. The device has a thickness of 50nm for strip 45, see col. 11, lines 40-60, or the part 41 is 700nm, col. 1, lines 30-35, so that the device is a nano-strip sensor. For claim 8, substrate 43 is glass, col. 11, lines 10-15. For claim 9, Al is disclosed at col. 4, lines 43-50 as a pad or output electrode material. For claim 11, trimmed is a process step that is a cutting of the metal, and since the metal is cut in a process step by etching for example, it is deemed to meet trimming.

Art Unit: 2832

6. Or as a 103 alternative, Wickramasinghe ' 235 et al. discloses at col. 3, lines 40-60, employing small nanoscale heaters and thermocouples, see also cols. 1-2, col. 5, lines 35-65, in order to detect temperatures of small regions, similar to the motivation employed by Suzuki et al. col. 9-10, lines 60-8 to measure temperatures in small regions, so that such a combination would have been obvious. Further as to the 103 alternative, if the group of metals is too large to anticipate the claim, Carter discloses W/Pt is a good thermocouple pair for measuring high temperatures at col. 2, lines 5-10, so that such a combination would have been obvious.

7. Claims 12-14 are rejected under 35 U.S.C. 102(e) as anticipated by Suzuki et al. or, in the alternative, under 35 U.S.C. 103(a) as obvious over Suzuki et al. in view of Wickramasinghe et al. '235 and Kobayashi (JP 2000205969). Suzuki discloses the claimed invention as noted above for claim 7, except here, the thermocouple can act as a heater by simply applying a voltage. The FIB process limitation does not create a distinct product since the device of Suzuki is small and not distinct from what is claimed and similar processes are employed.

8. As a 103 alternative, , where the FIB process does create a distinct process, Kobayashi discloses the claimed invention at Drawing 6 (machine language translation) with FIB strips of different material and uses the process to create small thermocouples as noted above so that the process would have been obvious where Suzuki expresses a similar desire at col. 10 as noted. Where the Suzuki device is alternatively not deemed a nanoscale device, Wickramasinghe ' 235 et al. discloses at col. 3, lines 40-60, employing small nanoscale heaters and thermocouples, see also cols. 1-2, col. 5, lines 35-65, in order to detect temperatures of small regions, similar to the motivation employed

Art Unit: 2832

by Suzuki et al. col. 9-10, lines 60-8 to measure temperatures in small regions, so that such a combination would have been obvious. Claims 13-14 follow from claims 8-9 under Suzuki above.

9. Claims 7-8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2000205969) in view of Carter, or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kobayashi (JP 2000205969) in view of Wickramasinghe et al. and Carter. The claimed limitation is as noted above except the W/Pt material. Carter discloses W/Pt is a good thermocouple pair for measuring high temperatures at col. 2, lines 5-10, so that such a combination would have been obvious. For claim 8, par. 19 of the Means section of Kobayashi discloses quartz, ceramics and insulators in general, and glass is such a well known insulator as to be listed as an insulator example in a standard dictionary, see The Random House College Dictionary, 1980, so that it would have been obvious to employ same. Glass at col. 3, lines 35-50 is also disclosed in Wickramasinghe et al. as an insulator with desired heat transfer so that same would have been obvious. For claim 11, the selective cutting by the FIB method of Kobayashi is trimming since material is removed to obtain a final result.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2000205969) in view of Carter, (with Wickramasinghe et al. as required in the alternative), further in view of Iida. The claimed invention is disclosed except the contact material. Iida discloses such material is known in the arts for contacts to thermocouples, see par. 17, lines 50-60, and col. 18, lines 12-15, rendering same obvious, where aluminum is a metal contact and Kobayashi discloses several metals for contacts for thermocouples.

Art Unit: 2832

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2000205969) (with Wickramasinghe et al. as required in the alternative), in view of Iida. The claimed invention is disclosed except the contact material. Iida discloses such materials are known in the arts for contacts to thermocouples, see par. 17, lines 50-60, and col. 18, lines 12-15, rendering same obvious, where aluminum is a metal contact and Kobayashi discloses several metals for contacts for thermocouples.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi (JP 2000205969) in view of Carter, (with Wickramasinghe et al. as required in the alternative), further in view of Suzuki et al. The claimed invention is disclosed except gallium. Suzuki et al. discloses employing an alloy of two different kinds of materials including Pt, W and Ga at col. 5, lines 25-45, so that such a combination would have been obvious where the references each deal with well known thermocouple materials and Kobayahsi and Suzuki are concerned with small thermocouples.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl D Easthom whose telephone number is 703 308-3306. The examiner can normally be reached on M-Th, 5:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on 703 308-7619. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308-7722 for regular communications and 703 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0956.



Karl D Easthom
Primary Examiner
Art Unit 2832

KDE

March 15, 2005